

Testing to Support The Army Transformation



*COL Andrew G. Ellis
Commander
Aberdeen Test Center*

Testing to Support The Army Transformation



Today...

4/12/2000 1:44pm

*COL Andrew G. Ellis
Commander
Aberdeen Test Center*



Testing to Support The Army Transformation



Tomorrow!

Advanced Instrumentation

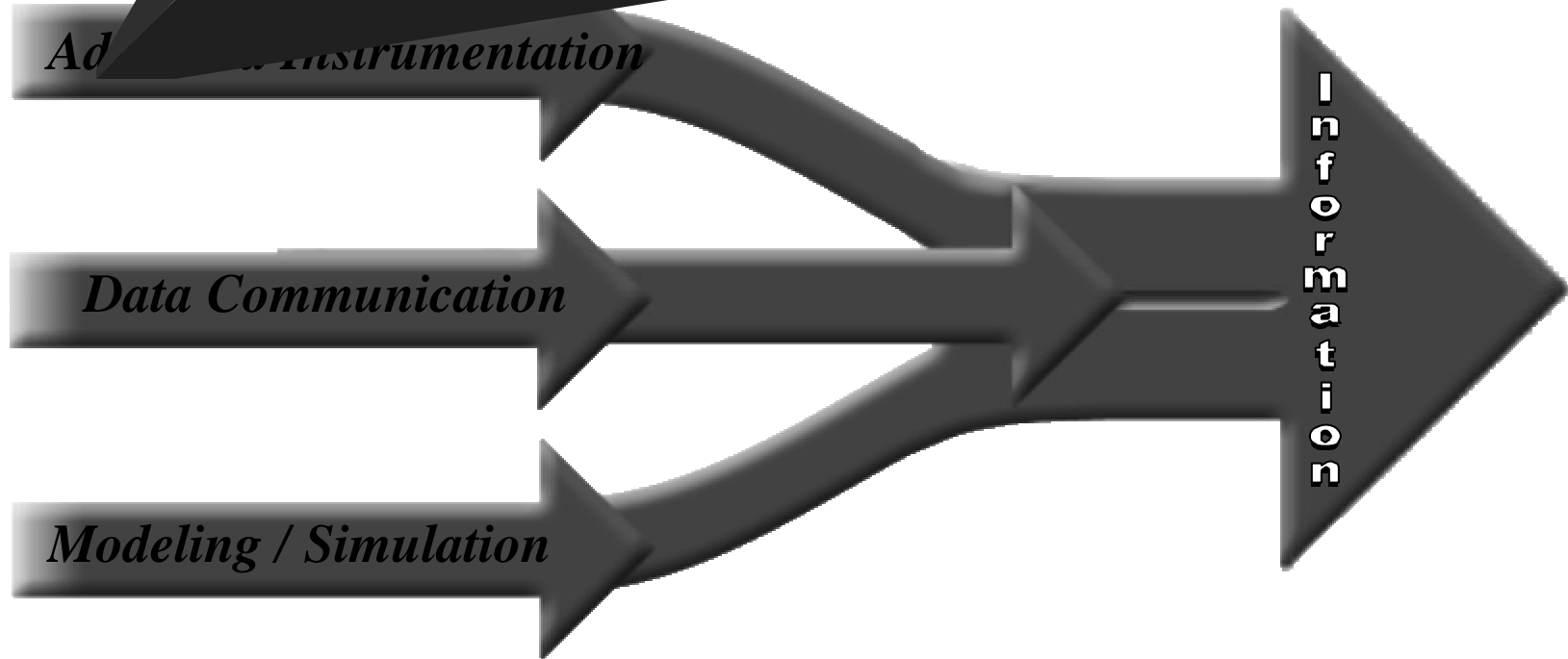
Data Communication

Modeling / Simulation

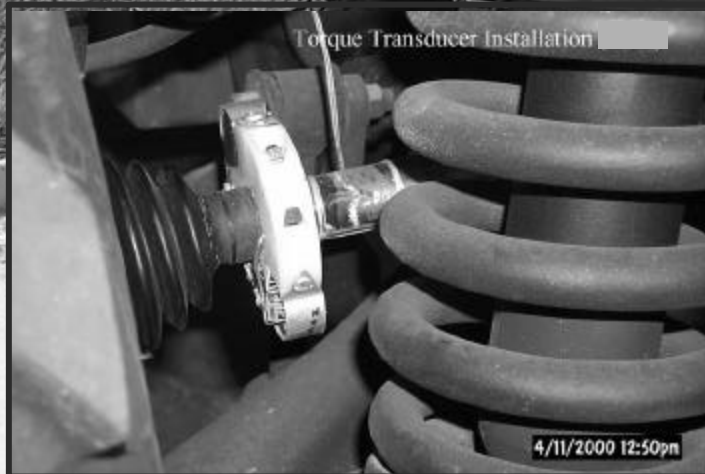
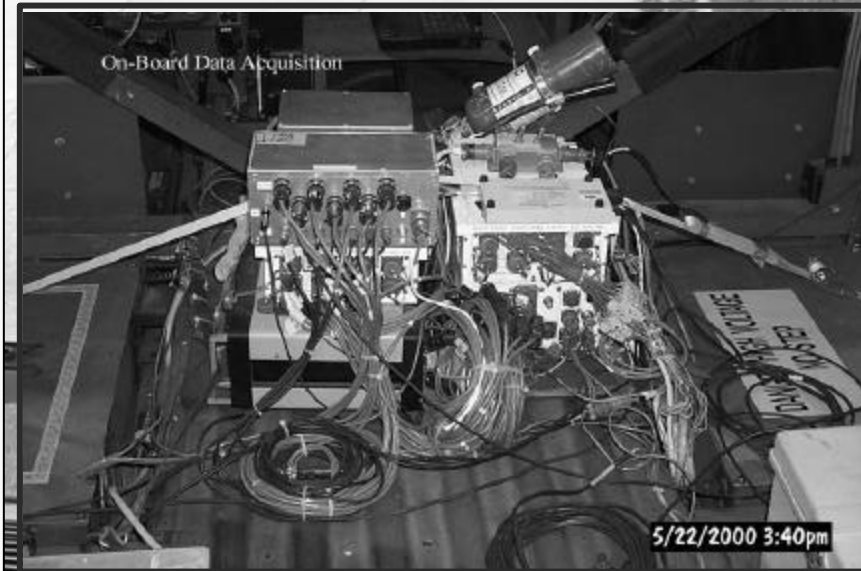
2010-2015



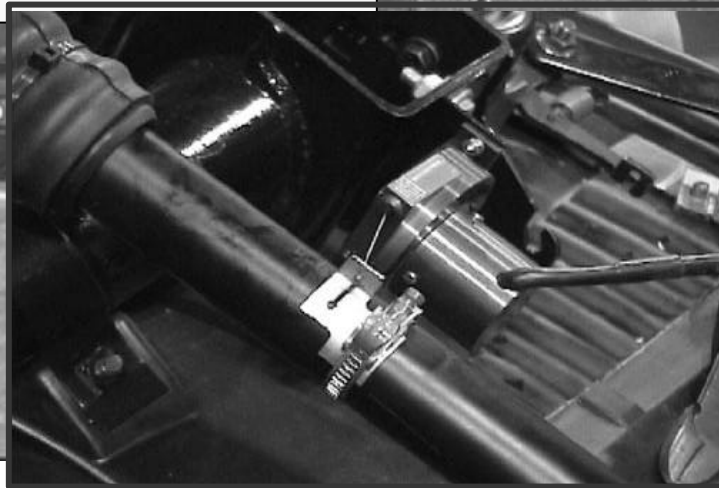
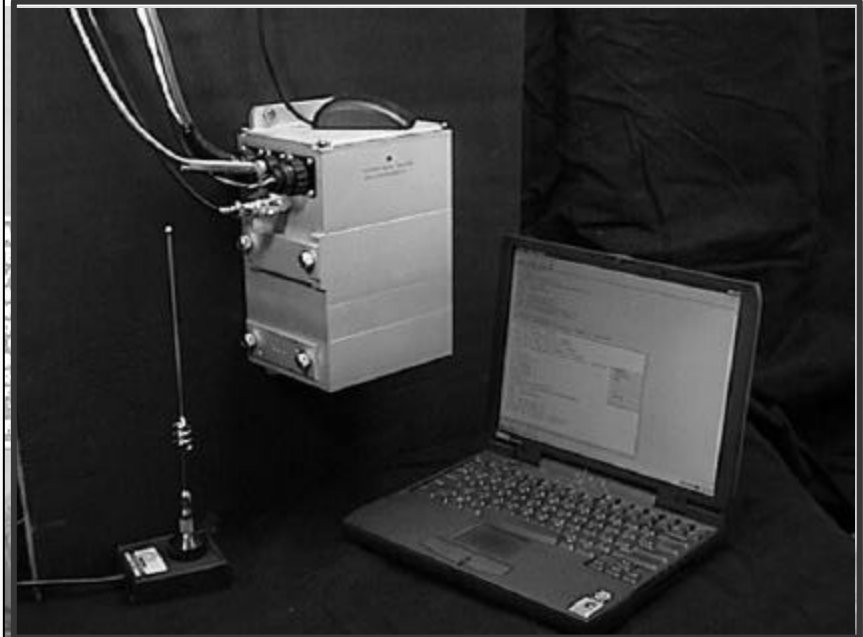
Advanced Instrumentation



- Advanced on-board computer system (ADOCS)
- Rugged
- Programmable signal conditioning
- Digital filtering
- Custom algorithms – pre-process data as required
- Up to 1000 Hz sampling from over 100 data channels
- Differential or ordinary GPS
- Communicate remotely via RF radio or wireless ethernet
- Stores up to 32 MB, on-board



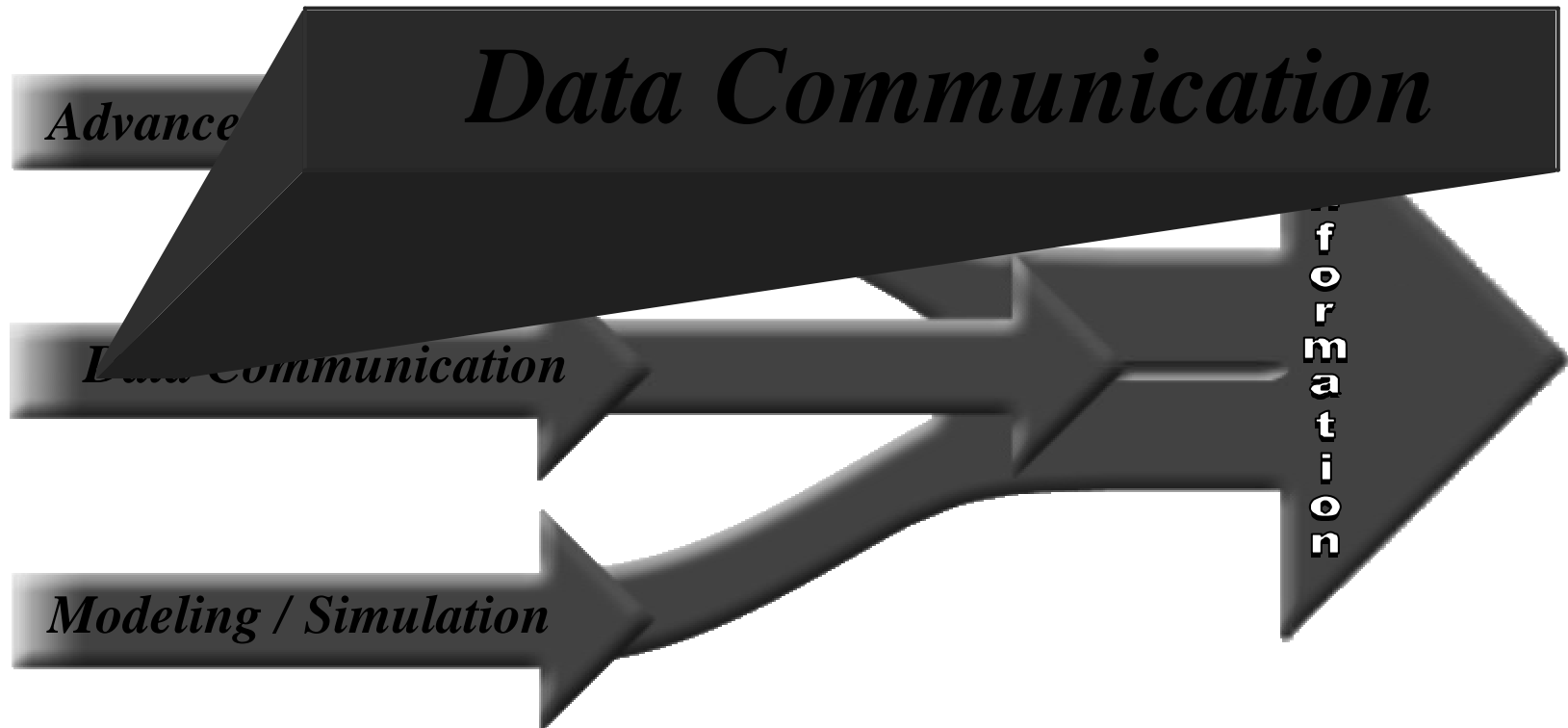
- Advanced Modular Acquisition System (ADMAS)
- Rugged
- Operates through kernel device
- Distributed devices integrate CAN, J1708, and other bus data with analog data
- 100,000 Hz sampling, per device
- 440 Mb+ in removable Flash memory
- Each device is a web server, can be polled/data can be harvested via satellite
- Integrated with differential / ordinary GPS





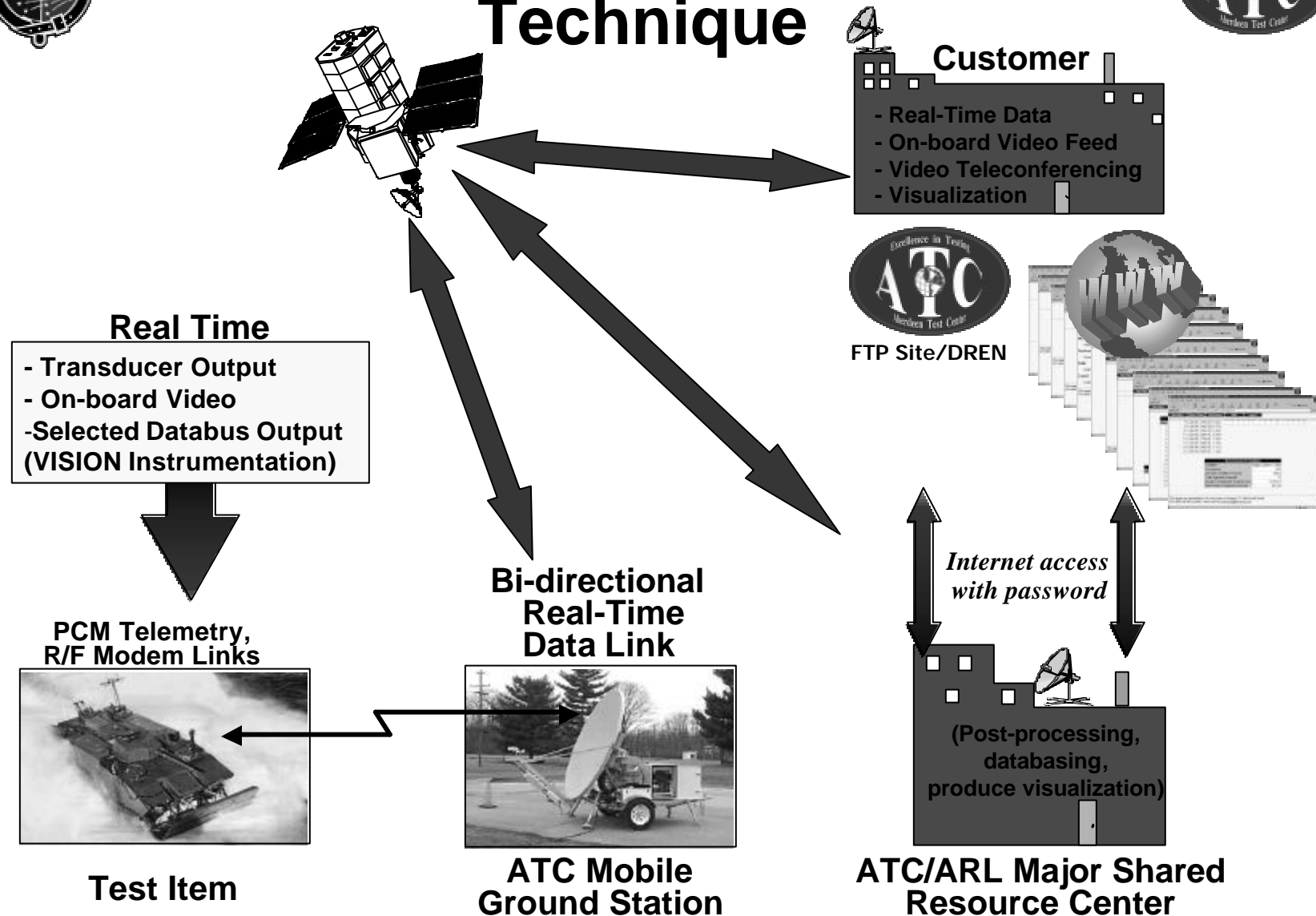








ATC Automotive Instrumentation Technique





ATC Satellite Communications System





ATC Satellite Communications System



- 384K bps duplex connection
- DREN connectivity
- Direct connection to customers and/or ARL MSRC
- MSRC connection provides secure access via the World Wide Web





Secure Data Access via the World Wide Web



U.S. Army Aberdeen Test Center
ATC Automotive Instrumentation Database

Please Log In:
Username:
Password:
Login

Main Menu
Menu
Perform
Proj
RAM
RAM
Logout
Log

Table

Time	8:1,200.00	1,300.00	13.822
1	9:1,200.00	1,400.00	15.374
2	10:1,400.00	1,500.00	11.442
3	11:1,500.00	1,600.00	5.879
4	12:1,600.00	1,700.00	3.706
5	13:1,700.00	1,800.00	3.162
6	14:1,800.00	1,900.00	2.111
7	15:1,900.00	2,000.00	1.184

Occurrences of Condition

Condition	Engine_Speed > 2000
Occurrences	493
Seconds Condition Occurred	463.6
Total Segments Scanned	73
Duration of Segments Scanned (sec)	85,352.6
Data Points in Segments Scanned	81,332

This page was generated in 16.0 seconds on October 27, 2000 at 08:30:48.
For help with this system, send mail to msd@atc.army.mil.



Secure Data Access via the World Wide Web



- Access using Internet Explorer or Netscape
- Connect to 32 processor SUN E10000 supercomputer
- Statistical calculations, data histograms, data limit searches
- Fully 128-bit encryption
- Secure ID password authentication
- Phase level security

*Meets all DoD
computer security
requirements!*

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Advanced Instrumentation

Data Correlation

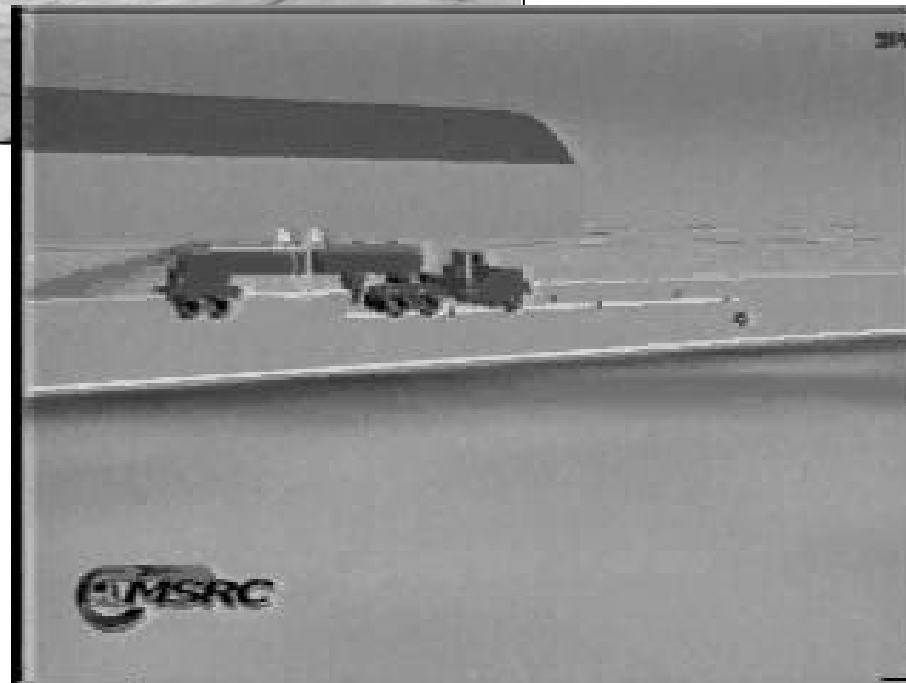
Modeling / Simulation

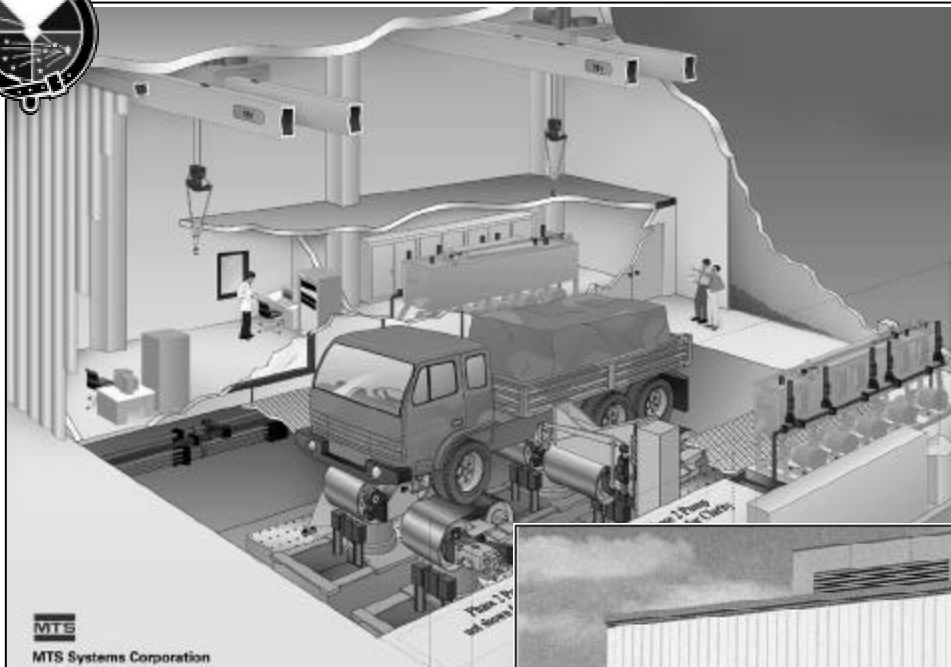
Modeling / Simulation

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Roadway Simulator



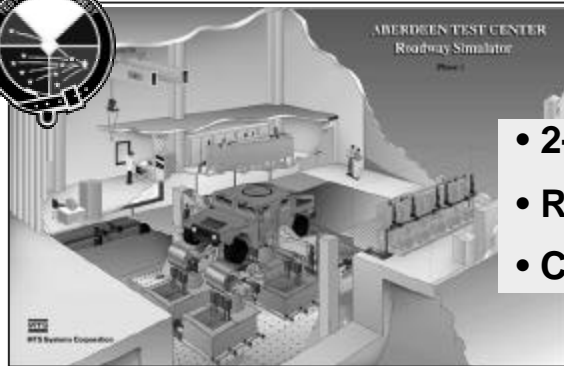


Roadway Simulator

- 3-Phase CTEIP-funded program
- Tests steering, handling, braking, stability, powertrain performance, etc...
- Robotic driver controls

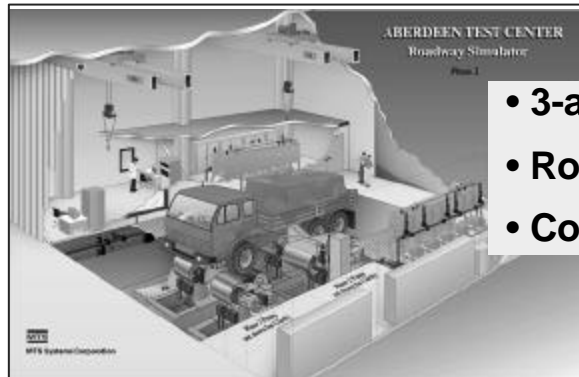
Brings the roadway into a controlled laboratory environment!





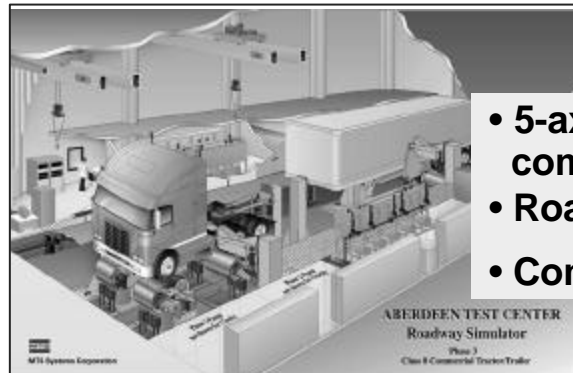
Phase 1

- 2-axle Vehicles up to 26,000 lb GVW
- Road speeds up to 120 mph
- Completed at ATC by May 02



Phase 2

- 3-axle vehicles up to 60,000 GVW
- Road speeds up to 70 mph
- Completed at ATC by May 03



Phase 3

- 5-axle truck/trailer or tractor/semitrailer combinations up to 80,000 lb GCVW
- Road speeds up to 70 mph
- Completed at ATC by May 04



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Tomorrow!

Advanced Instrumentation

Data Communication

Modeling / Simulation

2010-2015



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